

# AIR-ASSISTED FLARES

**WIDE RANGE OF OPERATION,  
LOW NOISE & LONG SERVICE LIFE**

Plants that require smokeless flares where steam is not preferred use our cost-effective, state-of-the-art, air-assisted flare systems. Our long-lasting flares use a range of innovative techniques to optimize air-to-gas mixing and eliminate steam-energy costs. These innovative designs are used to optimize flaring performance from small, simple applications to large, complex designs and everything in between. Air-assisted flares can be used as a first-stage flare in multi-flare arrays designed to meet high capacity needs.

## AZDAIR

The AZDAIR™ air-assisted flare delivers safe, smokeless operation in virtually all conditions—from maximum to minimum purge flow—without steam or support fuels. An efficient mixing design maximizes the system's gas-to-air interface, providing maximum smokeless capacity with minimal air blower requirements.

A significant difference between the AZDAIR and conventional air-assisted flares is the design of the gas riser. Conventional flare designs utilize an internal gas riser that runs concentric to the outer air riser in the flare stack. This can have several unintended consequences including:

- Difficult lifting/welding procedures for installation
- Flare gas condensation in the air-cooled internal gas riser can lead to burning rain and smoke
- In cold or hot service, the gas riser can contract or expand, leading to ineffective ignition of the flare gas with the pilots

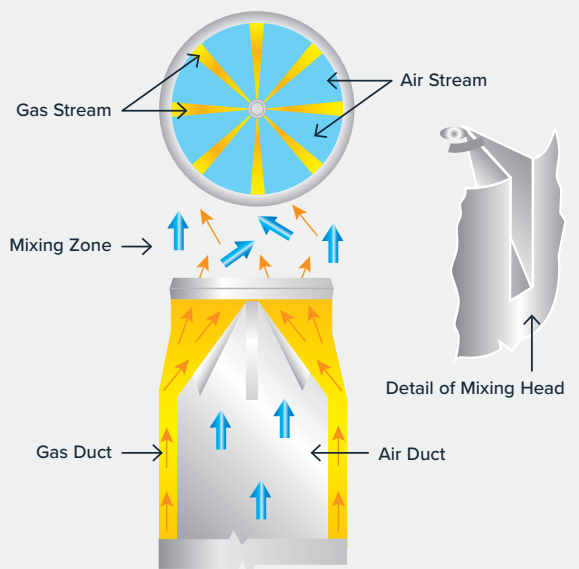
The AZDAIR flare utilizes an external gas riser to eliminate these problems. This simplifies installation of the flare stack and provides for more reliable ignition and smoke control. It also allows for a design that eliminates the U-tube/siphoning effect that can cause internal burning and premature tip failure in some conventional designs that utilize internal gas risers.

**JZ JOHN ZINK™**

A KOCH ENGINEERED SOLUTIONS BUSINESS



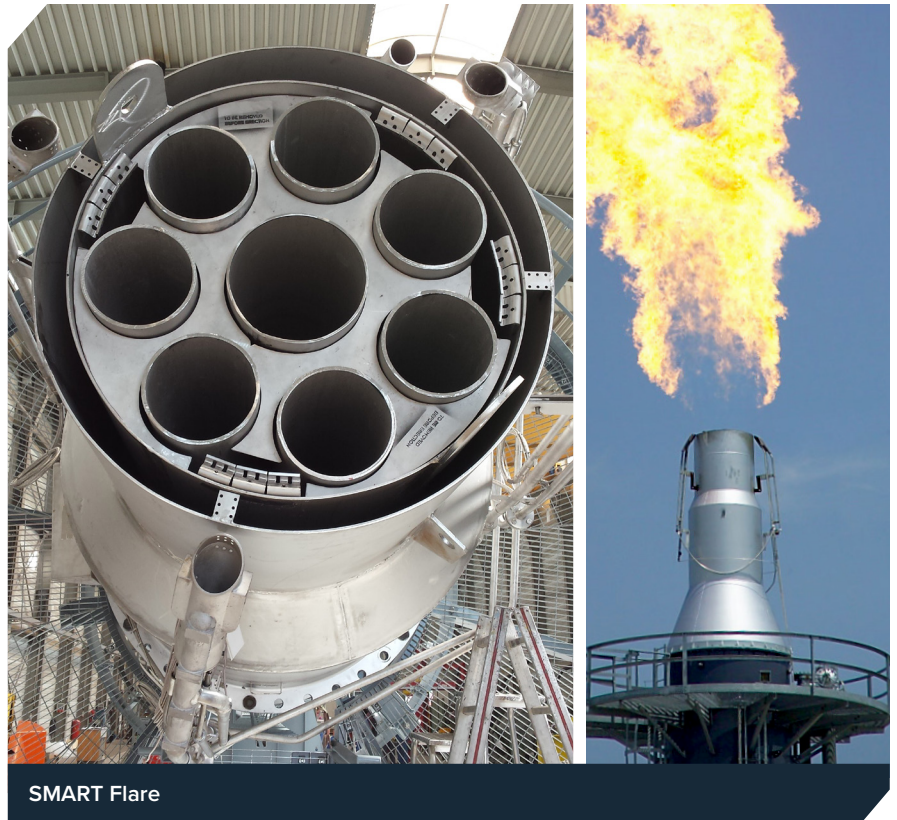
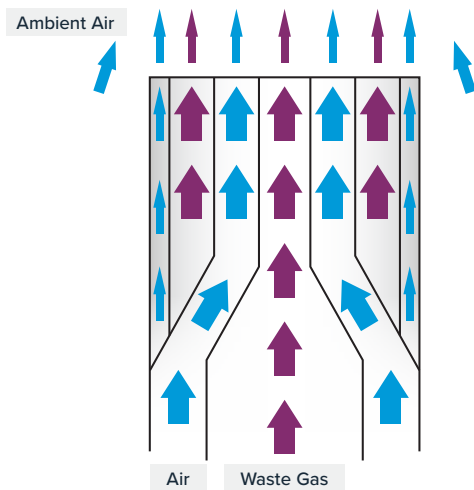
Our air-assisted flares deliver effective smokeless performance while eliminating steam-energy costs. That's smart. That's John Zink.



Design of the AZDAIR air/gas-mixing interface optimizes smokeless performance.

## SMART

The SMART™ flare is an economical design that utilizes an air tube delivery system similar to that used with steam/ air tubes in steam-assisted flare tips. The SMART flare is ideal for applications requiring moderate to high smokeless capacities and gases that are difficult to burn without smoke.



SMART Flare

## FAB

The John Zink FAB air-assisted flare tip is designed to provide smokeless flare gas burning in the most severe environments while ensuring proper interaction and mixing between flared gas and air.

The exclusive slot design promotes gas swirling to improve mixing and provides an extended contact surface for the gas and air to interact. This allows mixing optimization and guarantees high efficiencies in both small- and large-diameter flare tips. The FAB design is extremely flexible, allowing for either an internal or external gas riser.



FAB Tip

The FAB consists of two separate parts:

1. The gas side, where gas is distributed in radial slots
2. The air side where air flows along the concentric duct and interacts with gas flowing through slots along the full radius of the tip



## EXCLUSIVE, WORLD-CLASS TESTING

The John Zink Research, Development and Test Center is the largest and most advanced testing complex in the industry. This exclusive resource allows us to push innovation, gain expertise and measure performance in a near full-scale setting under real-world conditions.



Tulsa, OK, USA

Customers come from around the globe to our International Research and Development Test Center.

## SERVICE AND SUPPORT

The John Zink worldwide service organization is the largest, most technically savvy team of its kind. Our service technicians are trained in the latest technologies to evaluate existing systems for upgrades and retrofits, to troubleshoot operations, and to help plan your next turnaround. Our experts are available on emergency call-out 24/7. We also provide comprehensive courses held at the John Zink Institute.<sup>SM</sup> These courses help operators and engineers optimize their equipment and address issues at their facilities.

## GLOBAL REACH

John Zink has locations all over the map, with thousands of employees worldwide.



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